

**New Species of the Genus *Styringomyia*  
from the South Pacific and Southeast Asia (Diptera, Tipulidae)**

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This paper reports on new species of *Styringomyia* from specimens collected in Fiji, New Caledonia, Ryuku Islands, Sarawak (British North Borneo), Solomon Islands, and Vietnam. I wish to thank Dr. Neal Evènhuis for the privilege of studying specimens from the Bernice P. Bishop Museum Collections, in Honolulu, Hawaii. All types are being returned to the Bishop Museum. Thanks are also due to Dr. Van L. Johnson, Professor Emeritus of Classics, Tufts University, for reviewing the Latin forms used in the names of the species.

The genus *Styringomyia* is considered an abberant group within the tribe Eriopterini, and its affinities to other groups in the tribe have not been well worked out. Although the larvae have not as yet been described, the cervical sclerite on the adult of all species appears as an L-shaped plate, which places the genus in, or very close to, the genera which comprise the Eriopteraria.

***Styringomyia bidentata* NEW SPECIES**

*Male*.—Length, 5.8 mm; wing, 3.4 mm. Rostrum yellow-brown. Antennae with scape light brown, pedicel and flagellar segments fulvous. Head yellow-gray. Thorax with nota brown, with two narrow, dark brown lines on either side of center. Legs missing. Wings with brown veins, lighter in cell areas; a dark brown stripe along Cu from base to midwing. A yellow tinge is found along costal and subcostal regions. Cell 2nd M<sub>2</sub> weakly petiolate; vein 2A curves gently to the margin of the wing. Abdomen with terga and sterna brown, unpatterned; last segment and hypopygium (Fig. 1) yellow. The apex of ninth tergite terminating with a setiferous lobe that is subtended by small lobes. Ninth sternite truncated at tip, each outer apical angle with a long, slender seta. Basistyle terminating with a small thick tubercle bearing two long, modified setae, the bases of which are contiguous. Outer dististyle flat, broad, bearing abundant retrorse setae with the upper and inner edge glabrous. Inner dististyle with the outer lobe a flattened, quadrate blade, and with the inner surface covered with setae. The inner lobe a U-shaped rod. The posterior arm obtuse with three to four strong setae emerging at tip; the anterior arm longer, ending in two strong teeth, the upper tooth thicker and with one or two setae emerging from posterior surface.

*Holotype*.—(Male) New Caledonia, Mt. Koghi, 27.i.1963 (C. Yoshimoto and N. Krauss) BPBM Slide 2042.

***Styringomyia bidens* NEW SPECIES**

*Male*. Length 5.3 mm; wing 4.3 mm. Antennae with scape and pedicel brown, remainder broken. Palps light brown, the tip yellow. Head, thorax, and abdomen brown with light yellow stripe down midline, continuing to hypopygium. Halteres

light brown at bases, yellow at tips. Hind coxae yellow, other coxae brown. Front femur yellow with light brown ring at the three-quarter mark, remainder of legs broken. Wings with yellow tinge, veins light brown, with branches of Rs, r-m, m-cu and 2A darker; a barely perceptible brownish cloud over cord and r-m. Venation standard, with 2nd Cell  $M_2$  sessile; vein 2A strongly curved to margin. Hypopygium (Fig. 2) with basistyle having two modified setae at tip of the distal tubercle. Ninth sternite parallel-sided, the apex with a deep U-shaped notch, the lateral angles produced into slender lobes, not tipped with setae. The ninth tergite is broad at the base, forming a triangle at the setiferous tip, which extends posteriorly to the level of the tubercles of the basistyles. The outer dististyle an elongate blade, the distal end with one short and one elongate seta directed cephalad. Inner dististyle with the outer lobe a small, triangular plate, with about 14–15 sclerotized teeth on the inner surface. The middle lobe with a row of sclerotized teeth at the base, six teeth near the apex, the remainder of the teeth as in Fig. 2. The outer surface of the middle lobe platelike and glabrous; the inner lobe a long heavily sclerotized bar which forks into two thick points, the ventral point thicker than the dorsal.

*Holotype*.—(Male) Ryuku Islands, Iriomote I., Mt. Ushiku, 350 m, 2.xi.1963 (G. A. Samuelson) BPBM Slide 2106.

#### *Styringomyia digitostylus* NEW SPECIES

*Male*.—Length 5.6 mm; wing 5.0 mm. Antennae with scape and pedicel yellow on ventral half, brown on dorsal half. Head dark brown, pronotum slightly lighter. Mesonotum with three brown stripes separated by yellow to wing base, remainder of mesonotum and metanotum brown with a yellow stripe at midline. Coxae and trochanters yellow, remainder of legs missing. Wings tinged with yellow, veins light brown with brown clouds over fork of Rs, the basal portion of Cell 1st  $M_2$ , m, and r-m. Venation standard with Cell 2nd  $M_2$  sessile. First abdominal segment brown, remainder of segments yellow brown with a darker brown ring at posterior border of each segment. Hypopygium (Fig. 3) with basistyle having one strong modified seta at tip of tubercle; tubercle and seta subequal in length. Ninth sternite elongate, slender, with two setae at tip. Ninth tergite short and truncate. Outer dististyle an elongate blade, with long setae at tip. Inner dististyle with outer lobe an elongate blade having short, blunt, black teeth bordering distal end. Mesal lobe also an elongate blade with short, blunt, and black spines at distal margin; the inner margin directed dorsad and mesad forming a small membranous tooth, darkened at point. Beneath the distal spines is a bulbous area, from which extends a prominent, curved, and coiled fingerlike projection.

*Holotype*.—(Male) Ryuku Islands, Iriomote I., Mt. Ushiku, 350 m, 7-10.xi.1963 (G. A. Samuelson) BPBM Slide 2105.

#### *Styringomyia rostristylus* NEW SPECIES

*Male*.—Length 4.7 mm; wing 3.5 mm. Antennae with scape and pedicel dark brown ventrally, light yellow dorsally, flagomeres yellow. Palpi ochreous, darker at tips. Head yellow. Pronotum, mesonotum, metanotum, and first abdominal segment light brown. Remainder of thorax, coxae, and trochanters yellow. Dorsum of abdominal segments yellow, dark brown on latero-posterior margin; sterna yellow. Legs yellow. Front femur with an incomplete dark brown band at midlength, another smaller band at three-quarter length; hind femur with same coloration and markings;

front tibia with complete dark brown band at midlength, another at distal end; tarsi yellow, darker at tips, last segment dark brown; remainder of legs broken. Wings tinged with yellow, brighter along costal edge. Veins yellow with dark brown markings at anterior arculus, fork of Rs, r-m, m-cu, fork of  $M_{3+4}$ , base of 2nd Cell  $M_2$ , and distal section of 2A. Venation standard, with 2nd Cell  $M_2$  sessile; 2A curved sharply to margin. Hypopygium with one modified seta extending from the basistyles; the ninth sternite and tergite as indicated in Fig. 4. The outer dististyle an elongate blade, curved slightly mesad at midlength, with one short and one elongate seta at the tip, the latter directed cephalad. Inner dististyle as in the drawing. The basal extension of what appears to be the inner lobe elongate, expanded and rounded at the tip, and a thick spine extending from the ventral edge, appearing much as a beak or rostrum from the head of a bird.

*Holotype*.—(Male) British N. Borneo, Forest Camp, 19 km N. of Kalabaken, 25.x.1962 (K. J. Kuncheria) BPBM Slide 2104.

#### *Styringomyia vietnamensis* NEW SPECIES

*Male*.—Length 5.1 mm; wing 6.5 mm. Antennae with scape, pedicel, and first flagellomere yellow, remainder of flagellomeres missing. Palps yellow. Head yellow, vertex mottled. Prothorax reddish brown with lateral yellow markings on either side and along posterior margin. Mesothorax reddish brown with gray pruinosity over surface; inner area of scutellum marked with yellow; paratergites yellow. Metanotum brown. Abdomen yellow, only slightly patterned with brown dorsally and ventrally. Wings tinged with yellow, lighter in cells. Veins yellow. No markings on wings except a slight darkened at r-m. Venation standard with Cell 2nd  $M_2$  scarcely sessile. Foreleg yellow with no rings; last tarsal segment abruptly dark brown. Remainder of the legs missing. Hypopygium (Fig. 5) slightly darker yellow than the remainder of the body. Basistyle with two modified setae from tubercles, one slightly behind the other. The ninth tergite and oval-shaped hirsute lobe abruptly expanding on the lateral edges. The ninth sternite truncate with a large seta at either corner of the posterior margin. Outer dististyle bladelike, clear, with an elongate seta at the tip directed cephalad. Inner dististyle with the three lobes having a continuous comb of peglike spines on outer edges; the inner surface of the lobes also with peglike spines. At the outer tip of what appears to be the middle lobe is an elongate, slightly sinuate spine.

*Holotype*.—(Male) Vietnam, Fyan, 900-1000 m, 11.vii-9.viii.1961 (N. R. Spencer) BPBM Slide 2109.

*Paratype*.—(Male) same information as given for holotype.

#### *Styringomyia ysabellae* NEW SPECIES

*Male*.—Length 5.7 mm; wing 4.5 mm. Antennae with scape and pedicel light yellow dorsally, brown ventrally; flagellomeres missing. Palps fulvous at base becoming pale yellow at tips. Head dark brown. Thorax ochreous; haltere yellow at base, lighter at tip. Coxae and remainder of legs yellow; femur with incomplete brown bands at midlength, three-quarter length, and very tip; tibia with brown band at one-third length and very tip. Tarsi light yellow, abruptly dark brown on last segment. Middle legs missing. Abdomen yellow with posterior margin of each vergum dark brown. One strong black seta above each inner edge of the antennal scape, directed laterad and cephalad; one on each side of the vertex at about the level



of the posterior margin of the eye, erect and directed cephalad; two on each antero-lateral edge of the antepronotum, subtended by two to three smaller setae, both sets directed cephalad; one at each postero-lateral corner of the postpronotum, directed cephalad. At the lateral end of the preascutal suture are smaller, but still strong, pencils of two setae each; on either side of the midline behind the transverse suture are two pairs of setae, the larger on the scutellum near the base of the wing, the other on the postscutellum. Venation standard, cell 2nd  $M_2$  sessile and vein 2A strongly curved to the edge of the wing. Dark brown marks at anterior arculus, fork of Rs, r-m, fork of  $M_{3+4}$ , junction of m, and all tips of veins reaching lateral and posterior margins of wing. Membrane surrounding r-m also with dark brown cloud. Hypopygium (Fig. 7) yellow. Basistyle with two strong modified setae, the dorsal thicker and curved medially. The ninth tergite elongate, triangular, covered with numerous, very small setae. The ninth sternite truncate, with a small protrusion at midline. Outer dististyle bladelike with two setae at tip, one small, the other elongate and directed cephalad; at midlength a puffed cushion covered with setae; on the outer edge, at the base of the style, is a row of four to six small, dark, peglike setae. The inner dististyle is a flattened plate narrowing distally to a point. The distal third has a row of about 20 peglike spines; at midlength on the inner edge occurs an expanded cushion from which many setae project medially. The inner edge with a dorsal, stout, sharp, triangular tooth and a ventral dark, thick, rectangular, projection with the outer corners forming small teeth.

*Holotype*.—(Male) Solomon Islands, Santa Ysabel SE, Tatamba, 0–50 m, 7.ix.1964 (R. Straatman) BPBM Slide 2117.

*Paratype*.—(Male) Solomon Islands, Santa Ysabel SE, Tatamba, 0–50 m, 8.ix.1964 (R. Straatman).

### *Styringomyia dilinhi* NEW SPECIES

Male.—Wing 4.1 mm. Head missing. Thorax and abdomen dark brown with yellow on the paratergite and on the katapisternum, giving the appearance of broken stripes on the pleural area. Coxae and trochanters brown. All legs missing except for femur of foreleg. The femur is light brown with two broad dark brown bands, one midlength, the other at distal end; halteres light brown. Venation standard, Cell 2nd  $M_2$  sessile and vein 2A strongly curved to edge of wing. Wing with brownish tinge, veins brown, darker marking at r-m, extending on to surrounding membrane. Hypopygium (Fig. 8) brown with one thick, modified seta coming off a tubercle, both subequal in length and directed mesad. The ninth sternite is slender, elongate, with two setae at the tip. The ninth tergite is broad at its base, which then narrows into a short protrusion covered by many fine setae. The outer dististyle is a very slender, curved, blade with two setae at the tip, one very short, the other noticeably elongate, nearly three-fourths the length of the blade and directed cephalad. The inner dististyle arises at the base of the tubercle of the basistyle, extending mesad at a right angle. The inner lobe is a flattened plate with dark teeth at its apex. Two rows of nine to ten peglike setae are beneath the teeth. The outer lobe is also flattened and elongate. The tip is expanded into a triangular plate with four to six short, dark teeth at the most posterior point. At midlength, along the inner edge, arise several strong, elongate setae, directed basad.

*Holotype*.—(Male) Vietnam, Di Linh (Djfring), 1200 m, 22-28.iv.1960 (L. W. Quate) BPBM Slide 2066 (genitalia).

*Styringomyia labuanae* NEW SPECIES

*Male*.—Length 4.8 mm; wing 3.4 mm. Antennae with scape yellow, pedicel brown, flagellomeres missing. Palpi and head light brown, darker on either side of midvertex to posterior margin. Pronotum brown on sides, light brown medially. Praescutum dark reddish brown, yellow along lateral margins and including paratergites. Scutellum and metanotum dark reddish brown, yellow spots at base of wing and edges of metanotum. Halteres light brown. Pleura, coxae, and trochanters yellow. Hind legs yellow, darkened at tip of femur; remainder of legs broken. Abdomen yellow, darker at hypopygium. Wings yellow with dark brown markings, which include both veins and surrounding membranes in areas r-m, m-cu, base of cell 1st  $M_2$ , and at bend of 2A, and tips of veins reaching outer margin of wing. Venation standard, with cell 2nd  $M_2$  short petiolate, 2A bent sharply at a right angle to the margin of the wing, a spur at the angle. Hypopygium (Fig. 6) with one modified seta from tubercle of basistyle (spines on holotype broken). The ninth sternite elongate, coming to a blunt point from which two short, thickened setae extend. The ninth tergite a small plate, tip obtuse, and covered with fine setae. Outer dististyle flat, slender (probably with an elongate seta at the tip, although these are broken on the type). Inner dististyle with three lobes; the outer with short setae lining the margins, the middle lobe with 10–11 large teeth on margins, the inner lobe a short triangular plate, with a brush of setae directed laterally on its inner surface.

*Holotype*.—(Male) British N. Borneo, Labuan Island, 28–29.xi.1958 (L. W. Quate) BPBM Slide 2110 (genitalia).

*Paratype*.—(Male) same data as given for holotype.

*Styringomyia idioformosa* NEW SPECIES

*Male*.—Length 6.0 mm; wing 5.3 mm. Antennae with scape large and light brown, pedicel and flagellomeres darker; palpi dark brown. Head dark brown with yellowish tinge on vertex. Thorax dark brown; scutum with a light yellowish brown stripe on either side of the midline; scutellum slightly lighter, with a yellowish tinge. Abdomen dark brown. Legs dark brown with a yellowish ring about three-quarter length and at base of tibia; remainder of leg lighter. Hind leg with the first tarsal segment abruptly white, remainder of the tarsi brown. Venation standard, with m-cu gently sigmoid, cell 2nd  $M_2$  sessile; 2A curved gently to margin. Wing dark brown with white transverse stripes at base, middle, and extreme tip. Hypopygium (Fig. 9) yellow brown, dististyles darker. Basistyle with three strong modified setae, two at the end of an elongate tubercle, one slightly posterior. The ninth tergite a dark brown, wide, elongate plate from which emerges a small obtuse plate covered with numerous, small, golden setae. The sternite brown, short, obtuse. Phallosome an elongate rod with two black dots just before the blackened tip. Outer dististyle a long, brown blade with one short seta and one long seta extending cephalad; the inner face with a group of short, spinous setae about midlength; the base with six to seven black, peglike setae along the inner edge. Inner dististyle with the outer lobe a flattened, oval plate, glabrous on the outer surface; setae over entire inner surface, more numerous at tip and along edges. Inner lobe a small triangular plate with several setae along the basal margin.

*Holotype*.—(Male) Solomon Islands, Bougainville near Crown Prince Rs., 900 m. 11.vi.1956 (J. L. Gressitt).

*Paratype*.—(Male) same data as given for the holotype. BPBM Slide 2122 (genitalia).

The species *Styringomyia idioformosa* (*idio* = strange, *formosus* = pretty) is very interesting in having banded wings and three modified spines extending from the basistyle, features found in no other species of this genus described to date.

#### EXPLANATION OF FIGURES

Figures 1–9. 1. *Styringomyia bidentata* n. sp. 2. *S. bidens* n. sp. 3. *S. digitostylus* n. sp. 4. *S. rostrastylus* n. sp. 5. *S. vietnamensis* n. sp. 6. *S. labuanae* n. sp. 7. *S. ysabellae* n. sp. 8. *S. dilinhi* n. sp. 9. *S. idioformosa* n. sp. (b = basistyle, t = ninth tergite, s = ninth sternite, od = outer dististyle, id = inner dististyle, il = inner lobe of inner dististyle, ol = outer lobe of inner dististyle, p = phallosome).